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ABSTRACT

The larger study of which this research is a part examines the relationship between social scientists and practitioners in the development and dissemination of knowledge through higher education. In this publication the term "cognitive development" is used to refer to the creation and dissemination of knowledge in a field. The concept of the vertical division of labor is examined, especially as it relates to job qualifications and job and life quality. The possibilities for a more equitable distribution of knowledge and responsibility among nonprofessionals are discussed. In a broader view, the role and responsibility of higher education and research in democratization among social classes is addressed. Although economics are an important part of the vertical division of labor now in existence, this structure is found not to be exclusively a capitalist problem. In looking at three models of higher education systems--the traditional elite, the technocratic, and the democratic models--it is concluded that the last of these is the best for increasing accessibility to knowledge. Social science research in higher education is thus felt to have an important role in improving conditions in working life at all levels. (MSE)

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FORSKNINGSRAPPORT

Nr 61

DIVISION OF LABOUR, CLASS STRATIFICATION AND COGNITIVE DEVELOPMENT

by
EDMUND DAHLSTRÖM

HE 012 409

Report nr 8 from project "Practitioners and Social Scientists"

REPORT FROM THE DEPARTMENT OF SOCIOLOGY
UNIVERSITY OF GOTHENBURG

This is report nr 8 in a series of 8 reports from a research activity, financed by the National Board of Universities and Colleges. It has previously been published in a Swedish version by the NBUC. This edition, in English, is printed in a limited number.

Background

The research, of which this report is one of the results, has been conducted within two projects, studying the relations between scientists and practitioners. In the first project, "Social Scientists and Practitioners" (Edmund Dahlström), the focus was upon the scientists. The orientation towards societal praxis in general and towards specific categories of practitioners, was studied in an extensive series of interviews with leading social scientists at the University of Gothenburg. In the second project, "Practitioners and Social Scientists" (Edmund Dahlström & Esbjörn Johansson), the focus has been upon the practitioners side, as it appears in the context of sectoral research. By studying the relationship and the interaction between researchers in the social sciences and practititoners in various sectoral bodies as a part of the development of sectoral knowledge, it should be possible to analyze the following points, among others:

- the way in which the sectors studied relate to one another in terms of organization, more particularly organization of the development of knowledge, and the way in which they relate to the more schematic models of "sector" and "sectoral research" which have been put forward and discussed in the debate on research policy and investigatory activities in Sweden during the 1970s,

- within the sectoral framework, the way in which problems concerning the initiation and control of cognitive development and involving researchers are seen from the vantage point of practitioners at different levels, the relationship between this perspective and schematic arguments about "liberty" and "control" in research contexts, and the interrelationship in this respect of the sectors studied,

- the extent to which the development of knowledge within the areas studied can be said to be common to the practitioners and researchers involved and/or of both practical and disciplinary or interdisciplinary relevance, similarities or dissimilarities in this respect between the sectors studied and possible explanations for these relationships.

In a general study of different problems related to the relationship between practitioners and researchers in sectoral knowledge development, we have scrutinized recent literature on the theory of science and on research policy. We have discussed these matters with other researchers engaged in "research about research". Various working papers have been distributed for discussion among the researchers concerned and also to several practitioners. The outcome of this is a critical view towards the prevalent thinking on matters of science policy as it affects sectoral research where the social sciences are involved. The critique and the outlines of the kind of conceptual apparatus that could help to increase our understanding of processes of sectoral knowledge development, is presented in reports nr 1 & 3. Report nr 2 presents the general picture of the relationship seen from the researcher's view. Reports 4,5 & 6 presents the results from studies of three specific sectors, namely consumer policy, working-life, and higher education. The general strategy for these sub-projects has been as follows:
Studies of documentation and literature has been undertaken as to furnish each of them with a general picture of the origins and growth of the sector and the subsequent development of the sectoral bodies, together with developments of certain research fields of importance in the sectoral context. Against this background a study has then been made of the organization and evolution of knowledge development in the sector, partly with the aid of documentary and data studies and also by interviewing practitioners and researchers. One or more development patterns or processes have then been selected in each sub-project for an in-depth study of researcher-practitioner relations in the development of knowledge.

In report nr 7, the results from the sectoral studies are compared and related to problems discussed in reports nr 1 & 3. In report nr 8 the development of the system of higher education and research in Sweden and its effects on social stratification is discussed.

Edmund Dahlström:

DIVISION OF LABOUR, CLASS STRATIFICATION AND COGNITIVE DEVELOPMENT

1 Aim and disposition

The aim of this paper is to analyze at a fairly general level the relation between cognitive development on a collective level, division of labour and class stratification. Cognitive development means both the collective creation of knowledge, practical and scientific, and the spreading of knowledge in education and by other means. The paper is especially interested in higher education and research (designated as the HER-system).

The reform of higher education has been motivated by equality and democracy. Above all, the aim has been to remove obstacles to workers, women, adults - the old, and inhabitants of sparsely populated areas gaining acces to higher education. The question of how higher education is related to the vertical division of labour and social stratification, and what demands an equalizing policy in these respects makes on higher education and research has not been taken up to discussion.

The question of knowledge formation, vertical division of labour and social stratification is difficult and leads on to central and controversial issues in the debate about society; issues rooted in fundamental social and political beliefs (ideologies).

The paper is arranged in the following way:

In part two the concept of division of labour is analyzed. Interest focuses on the vertical aspect in particular. It is related to the worker's qualifications and competence. A tendency towards polarization of the qualifications structure has emerged; this means, first, that we have got many unqualified jobs with modest requirements of competence and second, an expansion or specialist jobs requiring higher education. Strivings to reduce the vertical division of labour in favour of a more democratic working life and more meaningful jobs for everyone are now emerging.

In section three I discuss how the more qualified organize themselves in professions to cultivate knowledge and to spread it within the professional field. Research, not least sectoral research, has acquired increased significance. Access to higher education and research has become an important means for professional groups to develop and to assert their professional interests. Several limitations in the professions' cognitive development are touched on, as is a critique of the growing professionalism. Ideas about a more democratic cognitive development with an increased mobilization of laymen at work-places and in local communities are touched on.

Section four discusses the question of the division of labour and cognitive development in a broader societal context. The vertical division of labour is a part of social stratification and class formation. Here we need to alucidate fundamental socio-political premises in the analysis and there are different views about class conditions and about what can contribute to reducing or obliterating class relations. Cognitive development and the HER-system is one factor beside others of importance.

Section five deals with the central question of the role of cognitive development. Cognitive development is used in a sociology-of-knowledge-sense referring to collective processes of creating and maintaining knowledge. Changes in higher education and research (the HER-system) are analyzed. A sketch is made of two model cases where the mode of organizing the HER-system is concerned: the technocratic form, which strengthens a strong vertical division and stratification, and the democratic form, which contributes to reducing the vertical division and the class element and is related to strivings towards a more democratic working life.

The same section also analyzes generally how the HER-system is to be seen in relation to the rest of society and how reforms within this area can affect the conditions in other areas. Some rather deterministic ways of arguing are called into question e.g. talking mechanically about the reproduction of class conditions. The importance of the autonomy of research is also stressed.

2 The division of labour

It has been obvious that the development of society during capitalist industrialism has meant an increased division of labour. The classic social thinkers analyzed this problem. Two traditions can be observed

in this analysis with regard to views on the necessity and class basis of the division of labour.

One tradition appears in utilitarians like e.g. William Petty and Adam Smith when they explain social integration and increased welfare by increased division of labour, exchange, mutual dependence, and contracts between individuals. The liberal evolutionists like Herbert Spencer see the parallel between the increased differentiation of biological evolution (in both the species' and the individuals development) and the social differentiation of societal development. Social differentiation becomes a necessary principle for development. Emile Durkheim who partly criticized the evolutionist philosophers' individualism takes over the same evolutionist idea [2]. The modern society's increased division of labour is bound up with the society's increased size and with inherent ecological processes concerning exchange between increasingly many people. This increased division of labour has, at the same time the function of creating increased diversity, dependence, exchange, and solidarity between people in contractual forms. The necessity and naturalness of the increased division of labour constitutes a fundamental idea in modern American Functionalism; increased social differentiation is a fundamental element in the process of modernization [3]. Increased social differentiation and certain other changes contribute to decreasing class antagonisms. Increased social differentiation leads to an increased number of strata with overlapping and intersecting conflict patterns. Admittedly increased social differentiation is thought to lead to tensions and conflicts, but at the same time a social capacity for dealing with these tensions is being created and integrations takes place on the basis of a consensus. Thus according to this tradition and fundamental view the increased division of labour appears as something natural and fairly uncontroversial.

The other tradition can be said to problematise to a great extent the division of labour included in capitalist industrialism. The critique has its roots in Romanticism with notions about the wholeness and universiality of man. The division of labour leads to a division of man. We meet this idea in the Young Marx e.g. in The German Ideology, and Economic and Philosophical Manuscripts [4]. The division of labour is closely related to alienation. The division into mental and physical work is analyzed. The well-known vision of Communist Society where man expresses his wholeness in different kinds of work is presented there.

The older Marx analyzes the division of labour against the background of the structure and exploitation of capitalist society [5]. Work is first subordinated to the conditions of paid work, the worker is forced to sell his work. Work becomes a commodity and its use-value is hidden. The capitalist form of production conceals the creative role of work in production. In a later phase work is subordinated to the mode of production, a kind of second subordinated. The division of labour is termined, above all, by the fact that production is steered by the largest possible increase in the value of the capital, and that the capitalist monopolizes leadership and control of the work-process. Marx notes that writers of the "classic past" directed attention to the quality and use-value of work while the political economy of the manufacturing era only looks at the consequences for the increase in value (exchange-value) and disregards the stunting of the individual worker.

Mechanization leads to the worker becoming the servant of the machine (the tool) from having previously controlled the tool. The worker becomes a living appendage of the machine. The worker is subordinated to the technical action of the instruments of labour with barrack-like discipline and advanced control systems. His qualifications sink and the interchangeability of workers of different kinds increases. The development of the forces of production means that the machine as a manifestation of science becomes increasingly dominant and that the worker is subordinated to this technological use of science. "Science appears in the machine as foreign to the worker and living labour appears as subordinated to the independently acting objectified labour." However, Marx notes a doubleness in the development of the forces of production; on the one hand, an increased division of labour with increased impoverishment of work and, on the other hand, a reduced division of labour with increased requirements of qualifications.

The critical view of the division of labour has stressed the "vertical" aspect of the division of labour. It is usual to distinguish between the vertical and horizontal aspects of the division of labour [6]. The horizontal refers to the division into professions and branches of industry "beside one another". The vertical concerns the superior and the subordinate, differences in standing, inequalities in material rewards, variations in knowledge and competence. This vertical side is closely related to social stratification and social classes (see section 4).

The critical analysis brings out two important circumstances in vertical division of labour. Control of the means of production and conditions of ownership on the one hand and the possession of knowledge and competence on the other. Capitalist society rewards both the possession of capital and the possession of knowledge, where knowledge is seen as a personal investment i.e. personal capital. The international division of labour and its inequality have been rewarded according to both these principles with the emphasis on the accumulation of capital [7]. However, technical development has lead to the ownership of knowledge in the form of technical know-how playing an increasingly large part, not least if we look to the international scene and the multinational companies. Some futurologists have underlined powerfully the increased significance of knowledge for power and influence e.g. John Kenneth Galbraith and Daniel Bell. Those who possess theoretical knowledge are the ruling elites of tomorrow [9].

The concern of the paper is the relation work and knowledge, i.e. division of labour and cognitive development. Every job builds on knowledge. It is usual to talk about competence for carrying out a job and to suppose that the job requires experience and skills for its accomplishment. It is usual to talk about a job's qualification level with regard to how much work experience and education it requires. It is usual to talk about the qualifications structure within a societal or occupational field with regard to what knowledge and skills jobs there require of their practitioners [10]. Changes in society often involve changes concerning the qualifications structure e.g. so that a certain job now requires more education and practical experience while others require less.

The vertical division of labour builds greatly on the level of qualification. Those with higher qualifications tend to have higher material rewards, greater influence and power, decide more over their own jobs, have greater opportunities to develop their personal resources in their work, enjoy greater standing and prestige, have greater self-confidence etc. Studies have shown how strongly access to different kinds of welfare correlate. Studies have also shown how important for individuals' general satisfaction and development possibilities being their own masters at work is (self-determination and autonomy) [11]. This circumstance should be seen against the background of the fact that work status is part of a larger stratification and class content (see section 4).

Division of labour is a broad concept. Some conceptual definitions are needed here. First, work can be understood in a narrower and broader sense. The narrow sense refers to paid work i.e. work for remuneration in the form of wages or profit of some kind in connection with some kind of market. The broader sense refers to all kinds of active tasks which can be said to contribute to society's preservation or change in a valued direction. We have a host of unpaid jobs in the home, in voluntary organizations, as citizens in the political community, etc. To begin with I am going to limit my analysis to paid work, and in the last section I will broaden the concept to take in unpaid work in the home where women's efforts and qualifications dominate.

The division of labour (which is understood as being synonymous to distribution of labour) concerns different kinds of social units: the division of labour between rich and poor countries, between different nations, between regions, between local communities, between work organizations, between public and private activity, between people, between an individual's different periods during the day, during the year or during his life-career etc. The main focus of the rest of this paper is the division of labour between people.

The division of labour is strongly linked to the organization of producing and distributing units. Henceforth I call these work organizations. We have a division of labour within and between work organizations. The vertical division of labour within the work organization manifests itself in superior and subordinate relations with command, communication, knowledge and status hierarchies. Work organizations are controlled in capitalist countries by their owner no matter whether they are privately, publicly or co-operatively owned companies. This is strikingly apparent in the Swedish legal system in the law of association and the law of contracts, where the owning bodies' right and obligations are regulated while the employee appears as a "third party". Strivings to modify this have appeared in the new reforms of labour law.

The patterns of industrial organization in the childhood of industrialism were taken to a great extent from military, state and church administration; these laid heavy stress on the vertical aspect of the division of labour. Discipline and control were to mark strongly the work organization with the expansion of the factories.

A group of more trusted and responsible white-collar workers emerged around the company management while the workers were subjected to a more impersonal and repressive control. The increasing mechanization increased the demand for careful control of industrial work. The scientification of production led to the work of production being subjected to more careful measurements and studies, to working methods being standardized, to jobs becoming more precise and controlled in more detail. This philosophy, scientific management, has dominated research on rationalization, and the design of work organizations in our country up to the 1970's. Division of labour, control of work and piece-work have been the fundamental elements of the philosophy. This impoverishment of manual labour has been accompanied by an expansion of specialist posts and expert functions with steering controlling functions in the larger companies: planning, drafting, rationalization, budget control, finance, construction, product development, marketing, information and communication, service functions, worker safety, personnel services etc.

The design of work organization has been bound up with broad economic and social conditions, e.g. widened markets, increased capital accumulation, state intervention, internationalisation, increased influence for multinational companies, new technology, more rapid turnover of capital investments, increased competition with more active efforts to control sales with more intensive marketing, increased use of research, more highly educated employees, stronger trade unions, concentration and centralization tendencies etc. The trend towards larger units has particularly promoted increased internal division of labour and specialization within the work organization. This should be seen against the background of the increased specialization between companies.

However, in more recent decades a changed view of how to organize production units involving a toning-down of the vertical division of labour has emerged. Older organization theory perceived the relation decision-execution, superior-subordinate, decision-maker-implementer as a fairly mechanical and linear relation involving direct steering of the unpromoted in the form of order-giving, mechanical control, and/or piece-rates. Older organizational models also perceived the company's environment and goal as static and stable. More recent thinking about organizations has recommended more opened forms with feed-back and with greater possibilities of flexibility in their functioning, where rigid hierarchies and central decision-making are reduced, more autonomy for

lower units is created, and mutual communication, co-operation and participation are built in [12]. The changes are bound up with many structural changes in the form of the growth and internal differentiation of work organizations, the markets' more dynamic and fluctuating structure, the more rapid turnover of capital and production methods, the resulting difficulty of steering production organizations with traditional hierarchies, the employees' higher educational level and greater demands, the trade unions' greater power, the demands for co-determination raised by widened democracy etc. Companies organizational problems have been sharpened by the economic crises in recent years. Strivings after increased openness, flexibility and self-determination in work organizations have led, in the 1970's, to fairly far-reaching ideas about breaking down traditional steering in order to build more self-controlling units under the banner from "castles to camps". Autonomy in lower units via the presentation of and responsibility for results is common. In the seventies a tendency to replace monotonous and dangerous and difficult jobs with advanced technology in the form of automation and industrial robots emerges. We have today a reduction in highly unqualified jobs in certain occupational field while unskilled jobs increase in other occupational areas.

An important question is how the lower and higher jobs in a vertical division of labour are related to one another socially and in terms of content. Here there is reason to distinguish between two type: the continuous and the discontinuous status order [13]. In the continuous the advanced knowledge in higher jobs builds on knowledge in the lower jobs. In the discontinuous vertical division of labour the advanced knowledge in higher posts is different from that required for the lower jobs. This has consequences for individuals' possibilities of advancing from lower jobs to higher. The discontinuous relation within a work organization leads to recruitment taking place on the basis of special forms of qualifying work in other organizations or in educational institutions - institutions of general and/or vocational education. This gives blind alleys in individuals' occupational careers.

When division of labour and qualifications structure have been analyzed it has been considered important to distinguish between technically and socially conditioned division of labour [14]. The technically conditioned division of labour is more strongly motivated by the rational organization of the production process. The socially conditioned lacks such a more rational motivation and is more directly bound up with

social conditions like conditions of ownership. The division has been related to the Marx concepts forces of production (technically conditioned) and relations of production (socially conditioned). In a broader sense all division of labour is socially conditioned, as all work organization has the given mode of production as its precondition and has thereby a double determination.

There are risks with this division. It can lead to technological determinism: motions that technology determines production solutions independently of social conditions. Studies of alternative technology have shown how many social premises are baked into technical solutions [15]. Computer technology permits e.g. different kinds of uses, and existing concrete solutions have generelly been based on certain special social conditions like owner control and centralist steering [16]. Computer technology is open to alternative decentralized solutions and democratic forms [17].

The trend in the post-war years has meant that we have got both more specialist jobs and extremely routine jobs. Marxist researchers have found reason here to link up with Marx' division into manual and intellectual labour in the qualifications structure [18]. A tendency towards polarization of the qualifications structure has been discussed. However, views are divided about whether it has been in the direction of qualification or dequalification.

The American sociologist Peter Blau has developed a similar theory for division of labour and qualifications structure within certain fields of work: That a high proportion of experts and specialists usually with high education is accompanied by the occurence of a high proportion of very unqualified workers [19]. He calls this the Bifurcation Theory: the occurence of very qualified workers supports the occurence of very unqualified and vice-versa. He shows that in office work the presence of the very qualified assumes that unqualified workers do unqualified work for them.

This bifurcation relationship is one starting point for my critical discussion hereafter. Higher education can be seen as contributing to a bifurcation within society as a whole. For the increasing numbers of specialists and experts produced within higher education and research to get jobs, a greater proportion of increasingly unqualified workers is required.

At the end of the sixties there was increased criticism of the dominant mode of organizing working life with its strongly vertical division with strongly segmented, firmly steered, piece-work bound and fundamentally unfree jobs at the bottom [20]. It manifested itself in intellectual criticism, in increased personnel problems, and in wild strikes. The trade unions presented in the early and mid-seventies far-reaching criticism and programmes for a reform of working life involving change in the work organization to give more meaningful and varied jobs with other types of stimulation, increased security of employment, increased co-determination in the decision-making process, participation in capital formation, and increased influence on companies and industry. These strivings have resulted in the seventies in Acts and law proposals in the same direction: the Act on Security of Employment, the Work Environment Act with demand for more meaningful and more autonomous jobs and with influence for employees on the design of the jobs, the Act on Co-determination with the unions opportunity of influencing decisions in their company, new agreements on rationalization, health care etc, involving a widening of the employees' influence on and goals in rationalization and health care. Suggestions for the distribution of capital to the employees collectively and individually have been presented. At the present moment it is difficult to express an opinion on what these strivings are going to lead to.

The democratization of working life also has a cognitive side; this has underlined firmly in the debate in recent years [21]. Up to now cognitive development has directed one-sidedly towards the owner and the company management while, in the future, it will be oriented towards employee and their trade unions to a greater extent. Plans for more employee-steered research have been drawn up and the setting up of the Centra for Working Life has been intended to strengthen research for employee interests thereby furthering increased co-determination.

3. Cognitive Development and Profession

Sven-Eric Liedman has recently examined the connection between division of labour and cognitive development discussed here in a rewarding and thought-provoking way in a history of ideas analysis [22]. His interest is actually in specialization in the scientific field. Specialization means a division of work and/or cognitive development has taken place so that the specialist represents new knowledge or competence which

does not exist in earlier and other specialities or in common knowledge. The increased division of labour with highly unqualified jobs does not lead like this to specialization in the sense of new competence. The author contrasts scientific specialization with scientific integration, where efforts are made to join up competence and knowledge in larger units. The previous critique of the increased division of labour can be seen in this integration perspective, efforts to unite cognitive development in larger entities. Specialization leads to a fragmentation which needs to be transcended through integration. This perspective is particularly rewarding when we go over to an examination of the more qualified professional groups, and of how they have organized for their cultivation and dissemination of knowledge.

The increased division of labour and social differentiation with social stratification and class formation has led, during periods, to a division of societies into corporations within which production, the creation of knowledge, and the transmission of know edge have taken place fairly separatedly and with a high degree of a tonomy. We find this tendency in mediaeval society with its divisio into estates, guilds and universities, each with its own collectiv regulation of production and development of knowledge, often with fairly local roots. The universities have had this somewhat corporate status until our day.

Capitalism and industrialism were to break up these corporate forms, but other institutions for the creation, co-ordination and the transmission of knowledge emerged gradually, among other things in the form of higher education and research. This can be regarded as a fairly natural phenomenon: that people have sought to co-ordinate practical occupational activity and production with the creation of knowledge. A host of educational establishments corresponding more or less clearly to different occupational fields and linked, to varying degrees, with research activity have emerged. In many fields cognitive and occupational monopolies have arisen for particular occupational groups. It is usual to talk of a profession when an occupational group has a cognitive and occupational monopoly [23].

Examples of professions are doctors, veterinary surgeons, dentists, clergymen, officers, lawyers, engineers of different kinds, psychologists, social workers, teachers of different kinds, cultural workers of different kinds and journalists. Professions usually have their rights recognized by public bodies, e.g. in the form of qualifications

required for special kinds of posts; develop pattern of serving relationsships to their clients and society; develop an organization to safeguard the profession's interest and maintain professional etichs and professional culture and social control over the members; and enjoy a certain autonomy within these bounds.

The knowledge transmitted in education is, within the higher education professions, composed of knowledge from the professional field (practical knowledge) and scientific knowledge. Doctors usually put it this way: medical skill rests on tried and tested experience, and science. For knowledge to appear useful and valid both these cognitive elements are required and this is what constitutes one reason for the professional organization: to bind fundamental knowledge and practical knowledge together.

Research has constituted an important instrument in professional strivings. It has been qualified occupational areas which have had research at the disposal. Research has increasingly been sought by qualified occupation and educational fields. The reform of higher education with its emphasis on the link with research can be seen as a confirmation of this tendency. Access to research has constituted a confirmation that the profession has valid and useful knowledge at its disposal. This tendency must be seen against the background of the expansion of science in the post-war years and the more rapid expansion of sectoral research in the last decade.

The traditional academic subjects can themselves be seen as professions, scientific professions [24]. Some scientific professions have lacked a defined occupational area outwith the universities and the cultivation and dissemination of knowledge has been limited to the university. The traditional scientific subjects have, in their basic research an intra-scientific activity to conduct, but they have had, to a varying extent, a practical field of activity with their own body of practitioners and researches. The medical profession has often been seen as the prototype of a profession with strong practical roots which has extensive relations with different societal institutions and sub-systems.

The origin of the professions has been bound up with the structural condisions touched on previously with regard to the division of labour. The expansion of the public sector in the post-war years has been a forum for the coming into being of many professions. There have been

many different kinds of initiatives and strivings e.g. structural changes, public strivings, movements and actions among clients, the occupational group's own actions, the strivings of educational institutions, outstanding scientists etc [25].

There has often been a rivalry between different professions about whose knowledge has been of greatest value and what education best would suit different fields of service and investigative functions. Antagonisms appear e.g. between technologists and social scientists within the field of working life, between doctors and different human science professions, e.g. social workers, in the social field and between different human science professions in the field of societal planning.

The relation between the professional organization, with the production dessemination of knowledge as its base, and the work organization varies from profession to profession. It is usual to contrast the concepts profession and bureaucracy in this context. Sometimes there is a state of tension between the work organization and the profession so that the profession tries to defend its autonomy in relation to the work organization. This can happen in cases where the profession is intimately linked to the administration like doctors in university clinics. Then a splitting the professions memebers can arise so that some make more of their career within the profession and strive after higher research and educational posts while others make their career within the work organization's administration.

The state of tension between administrators and researches has been particularly pronounced in the field of the universities with strivings to steer the higher education system (HER-system) more firmly administratively. Certain professions have been somewhat lacking in independence in relation to the work organization, e.g. technologists who have been drawn fairly unreservedly into the productive organization. It is mainly during the post-war era that a more scientific career independent of work organizations has been offered in the field of technology, thereby creating a base for independent cognitive development.

The profession's self-regulation and independence (autonomy) varies from profession to profession and has somewhat different motives and functions. One reason lies in the demands knowledge production and transmission make for freedom and protection from special interests and those in power. This is chiefly true of the freedom of research but

we have it within other professions and profession-like occupational groups like journalists and cultural workers. The idea is that objective cognitive development is intrinsically critical and must therefore be protected from the advocates and bearers of conventional truths and legitimating ideologies i.e. of the existing power elite. Another consideration is the protection of clients' interests from various counter-interests and that the profession's freedom is a condition for its protecting its clients and serving them. A third consideration can lie in strivings for impartiality and neutrality in a situation of contrary interests and parties e.g. within the field of law. The professions' unselfish and altruisitic functions and attitude are often stressed in contrast to other particular interests. This last motive can often appear unclear and doubtful as professions develop their own interests which do not always coincide with clients' and society's interests.

Professions tend to have certain intrinsic duality which gives rise to very contrary evaluations of them from both social thinkers and laymen. On the one hand, professions are society- and client-serving institutions with an orientation towards the cultivation of knowledge and an emphasis on their members' responsibility and altruism. They often develop an ideology which stresses their altruism and indispensability as a motive for their cognitive monopoly and priviliges. At the same time they often constitute aggressive occupational groups which stand up for their members' interests. Bernard Shaw talks about conspiracies against laymen. They constitue a strange mixture of serving the people and making a profit by this service.

There is reason to touch briefly on some general sociology of knowledge and epistemological limitations to societal cognitive development which also affect the role of the professions and the higher education system. Scientific cognitive development in the 20th century has been marked by the natural sciances' dominance. The human sciences' (social sciences' and humanities') development has taken place in the shadow of the natural sciences and the patterns of natural science have been transferred to the field of the human sciences - however not without opposition. This is not least true of the practically oriented production of knowledge in connection with the development of professions like e.g. psychologist and of sectoral research. Certain types of knowledge of a more hermaneutic and emancipatory character have not been given scope [26]. Sometimes reified, deterministic and technological outlooks have been chosen.

The expansion of knowledge has been supported by a host of organization and institutions; this has led to a segmentation and fragmentation of knowledge production and cognitive development. The universities' disciplines created bases for disciplinary segmentation with dufficulties covering certain societal problems and limitations of perspective. The cognitive development rooted in practice and in working life is marked and limited by industry's and the public administration's branch and sectoral structure. This has been amplified by the expansion of sectoral research; where the practitioners' steering of research has sometimes led to a narrowing of the cognitive field on the basis of limited political and administrative action frames. Certain new subjects with links with research which have been established at universities and colleges have been tied up in the same way around practical administrative boundaries. This is the background to many people stressing the universities' important task of integrating knowledge.

Industrial development and the related scientific and practical production of knowledge have been marked by general characteristics of society in the form of capitalist relations of production and bourgeois class dominance. Of course, this has chiefly been true of the human sciences' content and orientation. Scientific management, which was mentioned previously, can be taken as an example. Social science has been and is interwoven in society's practice[27]. Sometimes the critical function of social sciences has not been up to much. Under the influence of the natural sciences' determinism research into society has tended to take the society for granted and has not explored possibilities and alternatives.

The developed societies have gone in the direction of rising specialisation and professionalization not least in the post-war era. This has long been interpreted as something obviously good. In the last decade increased criticism of this development has emerged and people have begun to question the professions' role and contribution. The criticism concerns professionalism's incapacitation, pacification, fragmentation, isolation, degradation and subordination of man as consumer, student, patient and client. The professions[28] prevent people from developing knowledge, insights and health through self-activity and their own practice together with their peers. The professions decide

norms, needs, how problems are be solved and what is best for man. Specialists like technologists, economists, administrators, marketers, teachers, doctors, journalists, lawyers etc, develop a system of guardianship of the citizen. Every specialist develops his own language, his own knowledge systems with goals, norms and research results which are hard for the individual citizen to understand. The citizen is set in a situation of helplessness and help-seeking and he has to accept the professionals' help and advice gratefully. There is no stimulation to self-activity by developing one's own knowledge in everyday activity.

The critique considers that every profession, on account of its fragmentary outlook, has a highly questionable effection on the development of society and on individuals' welfare. Particular attention has been paid to medicine and education, and attempts have been made to show that the results the gigantic investments in education and medical care have achieved are questionable [29]. For instance, attempts have been made to show that medical care has only had a fairly marginal effect on the state of health and that the large care apparatuses have a host of directly unhealthy effects. The medical services' specialization and concentration to large care units exhibits many dubious disquieting features.

The same is also true to the expansion in the field of education. The schools and higher education, a well as adult education, have been given a tremendously centralistic structure where educational packages are spread from the centre to the periphery. The massmedia and advertising spread other centrally package messages. People point to the crisis appearing in the school system today. The school is separated from working life and the rest of practical life. The students are deprived of the opportunity of learning and developing by taking part in practical work. Instead they learn in the class room divorced from life. The professions develop their own knowledge and ideology about their own system, which legitimate it in various ways. The segmented expansion of professional guardianship is set in relation to society's industrial development in large-scale with its tremendous differentiation and markets where people have difficulties finding personal and life-developing relationships.

There have been som reactions against the drawbacks of specialization and the need to mobilize laymen and clients into self-activity and self-reliance has been emphasized. Social care has been reorganized

so that a previously differentiated system of social care has been integrated within the frame of a unified local social service [30]. Social care now has begun to be oriented towards community work involving support and stimulation of affected and wronged people's own activity.

The importance of workers and other non-specialists taking cognitive development into their own hands and beginning to research into their own circumstances, conditions and alternative lines of action has also been pointed out. Perhaps the most provocative contribution here is Sven Lindqvist's Dig Where You Are. How to Research into a Job[31]. He shows there how established cognitive development, including research, leads to a distorted picture of the history of work-places and work, and that here there is reason for ordinary workers themselves to begin finding out the facts. He gives here a guide to how the history of work organizations can be researched. In a similar way, people can be urged to investigate actual conditions thereby raising consciousness and bringing alternative lines of action into Focus. At present we can see movements in many fields e.g. environmental movements, housing movements, and other action groups where on their own initiative, people have found out the facts and acted against authorities and established organizations often in opposition to established specialists.

This critique of professions concords with an extensive critique of the development of western society which has acquired its most explicit form in the seventies[32]. The critique has concerned the philosophy of economic growth with its stress on high energy, high mechanization, large-scale industry, concentration, centralization, urbanization and bureaucratization and its supposed consequences for the environment, and the destruction of resources, and the global exploitation of underdeveloped countries.

Some critics have brought these ideas together in a more embracing social philosophy with links to older so-called populists (Narodniks and Gandians)[33]. It is possible to talk about a neo-populist movement which is directed against our age's controlling exploiters in the "centre" with capitalists, bureaucrats and scientists - experts, and which wants to mobilize the people in the "periphery" for a different organizational solution stressing small-scaleness, the local community and self-reliance.

This critique of professionalism and the stress on mobilizing laymen can be seen as a cognitive democratic idea. It has close links with the idea about the democratization of working life touched on previously. Democracy in working life requires elements of cognitive democracy just as - vice-versa - cognitive democracy requires democracy in working life and in the traditional political system. This leads us on the general problem of social class.

4 Social Stratification and Classes

Vertical division of labour constitutes a basis for social stratification, wich means the vertical classification of people with regard to their access to what appears desirable in society in the form of power, material privileges, prestige, spiritual purity, education and welfare of different kinds. In every developed society many such dimensions of stratification can be distinguished and they tend to hang together so that those who have a lot of one sort also have lots of other sorts. The objective stratification matches subjective circumstances. Those who have the same amount of privlleges, power, education, and standard of living tend to socialize with one another, marry one another, build families and living communities, communicate with one another, think alike and act alike, feel affinity and identity, develop a common system of belief, help one another, form collectives and organize themselves and act collectively outwards[34)].

Classes are historically rooted, broader and more fundamental groupings of strata. Class structure is determined by economic, political and socio-cultural conditions. Most theories of class see position in productive life and the control of the means of production as fundamental. Views about the role of classes in history and about the existing class structure in a given society constitute a watershed in political, social and cultural debate.

Different class theories have emphasized different conditions of significance for class formation: control of the means of production, the production process and the results of production (production classes), access to the welfare production of goods and services gives rise to (consumption classes), control of instruments political power and political resources (political classes), and access to education and knowledge (knowledge classes). It has often been assumed that class-forming

conditions have varied historically, e.g. so that in the days of the estate-society (feudalism) political power relations played a more direct role while, under capitalism, economy has been more important as a class-forming factor. Some have considered that in the non-capitalist countries in Eastern Europe the political system (one-party system and centralist state) has played a more prominent part in class formation. Several social thinkers have seen in developed industrialism the appearence of a "new class" whose power mainly rests on knowledge[35]. Bell sketches out a development for the developed societies which means that knowledge becomes increasingly important for society's functioning and that knowledge élites become the ruling class of tomorrow.

Often these class-forming factors are not isolated; rather we imagine they act together in the historical process according to some definite pattern so that som factor is more decisive. To the author the control of material means, like means of production, and means of coercing people, like weapons, have so far constituted the basis for class formation, but that in present-day society other means related to steering of people (political means) and persuasion of people (knowledge means) have acquired equivalent or greater importance.

We can distinguish two fundamental problems in the discussion of class. One concerns the existing veritcal division of labour and the exploitation and inequality related to it. The other concerns mobility between the different vertically arranged strata. The demand for democracy and class equalization has concerned the latter condition to some extent: that the "unequal" posts are to be distributed more fairly between social classes and strata. This demand has been directed to education in particular: that those from lower classes shall receive educational resources to a greater extent and better be able to assert themselves in the sorting and competition for the higher positions. The school reforms implemented in the post-war era in Sweden and in other countries have aimed at removing class barriers to education; this has only been achieved to a limited extent[36]. This aim has constituted a central theme of the university reform, where access has been widened and attempts have been made in different ways to support an increased flow of students from the working class.

However, reforms promoting mobility do not alter the basic division of labour and class structure, they help to increase competition and to draw development in the direction of what can be called a meritocratic system [37]. A system of merit criteria is developed, methods of selection are developed, and demands that the student and the worker shall constantly qualify themselves in performance and result are sharpened. It has long been considered that the USA has taken meritocracy a long way, but today much suggests that Japan has gone furthest and socialist states in East Europe have also been successful in developing meritocratic systems.

Social stratification means that rewards are distributes unevenly between different strata. Certain social thinkers have regarded this inquality a necessary pattern if societies are to function, survive, or function effectively. This functional theory of social stratification [38] points to many conditions of unequal distribution of above all material rewards that contributes to society functioning more effectively. For the most capable to apply to the most demanding positions these positions must give greater rewards. For people to develop their personal qualifications for working life, they must get greater rewards for these educational sacrifices. For people to work harder in the jobs they have,they must be recompensed in proportion to their performance. People who contribute more to societal production in their work must get comparatively greater remuneration. For people to create, innovate, and improve society their creative activity must be rewarded.

The critique of these functionalist arguments has argued that there are other incentives than material ones for people to educate themselves work hard, create, or seek demanding jobs and that differentially distributed, material rewards create segregation, and have accumulated effects which cancel out their possible contribution to society's effective functioning, and create exploitation and conflicts [39]. The theory of the functions for society of social stratification has indicated very unclearly what survival and societal efficiency consist of. Functional principles for the fair distribution of rewards have only worked to a small extent reality. Completely different and irrational conditions have constituted the basis for the distribution of rewards, and Functionalism's "distributive justice" has become something of a myth, which legitimates existing exploitation and injustices.

One watershed in political, cultural, and social debate has been views about the economic system's significance for economic development, social welfare, and goals of society like democracy, equality, and freedom. The liberal view considers that free enterprise and the market economy are the best road to economic development and democracy. The socialist view considers that the capitalist mode of production is the basis for a class exploitation and antagonism which must be transcended to achieve the societal goals democracy, equality, and freedom. The economic system is composed of structural elements with regard to which capitalism is characterized by the following: predominantly private ownership of means of production (capital ownership), freedom of trade-market competition (market), profit-steering-capital accumulation (steering), and wage-earners with wages fixed with regard to demand on the market and productivity-profitability (wages). Socialism conceives of a change in the economic system in the direction of collective capital ownership, limitation of market forces (transcendence of commodity production), plan-steering towards social goals, and a more equal wage structure and distribution of income (transcendance of wage work).

The reformist Labour Movement in Sweden has placed itself on the socialist line when it indicates in its programme the long-term goal of abolishing the capitalist system by placing the control or production in the hands of the whole people. According to some of its own strategists social democracy is following a strategy which began with political democracy in the beginning of the inter-war period, social democracy in the thirties and in the post-war era, and it has begun to develop economic democracy with the new reforms of labour law, coming reforms for capital participation and widened reforms for social planning e.g. industrial policy. Early reforms like the Saltsjöbad Agreement are regarded as historic compromises on the road to socialism[40].

At the same time it can be noted that important features of the capitalist system have been preserved and, in a sense, reinforced e.g. private ownership, profit-steering, and market competition. Some have asserted that social democracy has become the administrator of developed capitalism[41]. Others have, however, pointed out that state intervention has gone so far that market forces and other forces for economic development have been eliminated and that bursting point for the capitalist system has therefore been reached[42].

The Leninist-inspired left movements have regarded the reformist policy as class collaboration and have argued that socialism cannot be achieved within the framework of the existing bourgeois-parliamentary system[43]. The supposedly bourgeois form of government must be replaced by government under the leadership of the working class, and policy must be oriented more directly towards changing the different sides of the production system in the direction of collective ownership and a planned economy, and bourgeois culture must be replaced by a proletarian culture. Opinions are divided about the existing political system's dependence on the class system and about how the mode of production could be changed by means of the political system (the state) and its transformation.

Now the question is what role the elements of the economic system play in the vertical division of labour and qualifications structure and thereby indirectly in social stratification and class formation. It seems fairly certain that conditions of ownership, freedom of markets, profit-steering and capital accumulation created a framework for the polarization and bifurcation tendencies touched on previously[44]. The impoverishment of many jobs which has taken place on account of scientific management's strivings after rationalization, appearing in minutely controlled, highly segmented, piece-rate jobs, reflects class and ownership relations, where the employers have resorted to severe means to get efficient contributions from the workers. The question is whether this mode of organizing work has been technically necessary even in the light of "the conditions of the mixed economy" as it has been a matter of a well-educated and traditionally well-disciplined group of workers in the post-war period. Many things suggest that the rationalization movement has built more on class ideology than on science in developing a modified Taylorism in Sweden. Present-day rationalization experts have, at any rate, reconsidered several points with their strivings after a widening of the job and self-determination in the work-process[45].

Moreover, the question is how much of the veritcal division of labour which appears in the capitalist countries is socially conditioned e.g. by the structure of ownership. Comparisons with the division of labour in the non-capitalist countries in Eastern Europe shows that much of this vertical division of labour also exists there. This can be interpreted in different ways. It can be asserted that a great part of the vertical division of labour is predominantly technically conditioned in

the sense that a socially effective organization of production demands such a division of labour. Or it can be argued that there are class conditions in socialist east states too, though in some other form, and that the vertical division of labour there is to be regarded as more socially than technically conditioned. Or it can be said that it is a matter of a temporary loan from the capitalist world which will disappear when the socialist states become more socialist.

The eastern socialist countries differ from the capitalist democracies of the West in one respect. The autonomy of the professions is considerably more limited. First, the more extensive state apparatus with its bureaucracies has a stronger control of professional activity and, second, the unit and avant-garde party steps in as an overshadowing control apparatus. This is particularly marked in the field of the social sciences where the party as the bearer of "scientific socialism" is the highest authority and controls that ideas too critical of the system. This control applies to all professions with critical functions like scientific research, news transmission and cultural work. We have seen negative consequences in the Lysenko Affair, the Russian social sciences' uncritical orientation, and cultural workers difficulties in making social criticism. The party with its own schools and research is acting like a quasi-profession. Democratic centralism which, among other things, means that higher bodies are to approve lower bodies' choises of representatives make this quasi-profession top-steered and not particularly open to criticism and self-criticism.

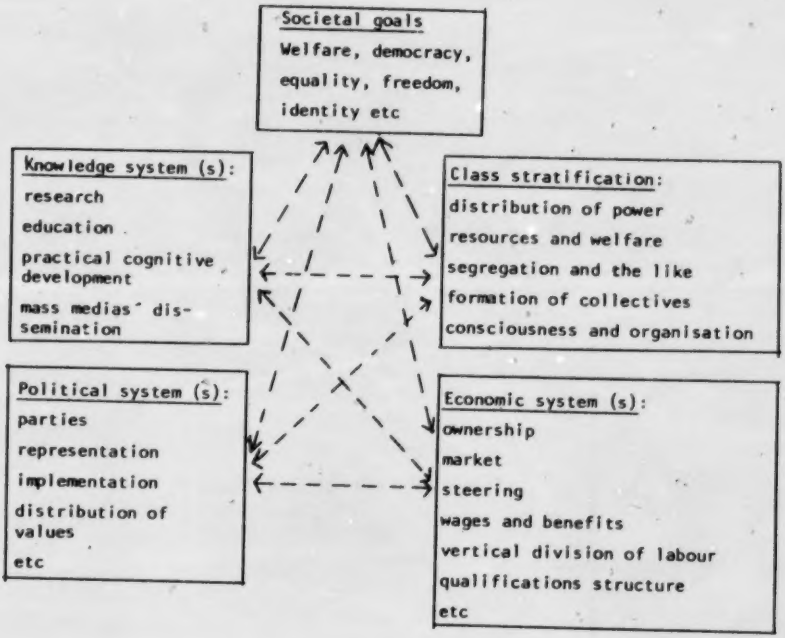
The Chinese Cultural Revolution has constituted an interesting attempt to reduce the vertical division of labour and to eliminate, in different ways, stratification gaps and gaps between specialists and laymen.

Great emphasis was placed on removing unjustified divisions which had to do with education. The vertical division of labour was reduced by giving the unpromoted broadened tasks with autonomy, placing management in the hands of bodies where all were represented, reducing the experts' and specialists' influence and creating increased contact, planning and implementation, introducing job-rotation so that intellectuals worked with physical labour for periods, orientating cognitive development and qualified officials to learning from the people, giving workers widened educational opportunities, orientating educational institutions to workers and farmers, abolishing discontinuous status orders, and widening recruitment to qualified posts. The Cultural

Revolution's critique applied not least to the party under the slogan "storm the headquarter"and it showed what sources of elitism and vertical division the party constituted. The party was oriented towards better serving the people.

The Cultural Revolution's class struggle was much concerned with access to knowledge and the possibilities of consciousness-making and it showed how the control of knowledge could constitute a source of exploitation and class formation[46]. The Cultural Revolution's critique to a great extent was directed against the professions' élitism, their extent and influence was limited and it was firmly impressed on them that they should learn from the people. The Chinese Cultural Revolution must be viewed in the light of special conditions concerning economic development, traditions of civilization, intellectual élitism, and the Soviet pattern of socialist development imposed from outwith the country. The Cultural Revolution went far that it tried to break up the scientific professions, which were partly placed directly under the party's leadership. The changes which have taken place recent years suggest that some of the more extreme of the Cultural Revolutions's strivings have been rejected and that greater autonomy and greater resources have now been created for the scientific professions, at any rate, the natural science professions.

Here it can be appropriate to summarize and try to survey the different conditions which have been discussed so far and the links between them. Division of labour and qualifications structure have been placed in relation to class stratification, to the economic system's elements like ownership, the market steering and wage structure (income distribution) and to the political system. Earlier we discussed knowledge systems in the form of cognitive development, research, and education. In this section we have touched on societal goals in the form of democracy, equality, freed, and welfare. We can illustrate these social conditions in the following figure:



According to experience from our and other similar societies the division of labour-qualifications structure has been influenced by class stratification and economic conditions like ownership, market competition and profit-steering. Experience from non-capitalist countries in the world suggest that changes made in certain economic conditions like collective ownership, planned economy, and modified market structure do not change the vertical division of labour-qualifications structure radically. Vertical division of labour-qualifications structure is probably related to many conditions, and knowledge systems in the form of cognitive development and education play a role here. A change in division of labour-qualification structure probably requires a democratization of cognitive development and working life at the same time.

5 The Significance of the Higher Education System for Division of Labour and Class Stratification

The system for higher education and research has been named the HER-system. It embraces all research and higher education regardless of in what institutional form it is carried on. In Sweden today this activity is co-ordinated chiefly by the UHÄ, the National Board of Universities and Colleges.

The HER-system in Sweden has been transformed from élite universities to mass higher education[47]. This trend applies to the majority of developed countries and is bound up with the changed structure of industry and the labour market with increased demands for highly educated individuals and for goal-directed (sectoral) research. It can also be characterized as a development from cultivation (bildning), which was the traditional university's principal task, to qualification (utbildning) with greater stress on vocational training[48]. The post-war era has involved an expansion of an increasingly vocational oriented basic education. This mass training has been given firmer administrative steering with increased influence for "public interests" in the new reform of higher education. This has restricted the freedom of the scientific professions somewhat. The expansion of education and the rapid development of sectoral research have created problems for basic research. The traditional professional leadership of research has been preserved to a limited extent within the framework of scientific institutions, faculty-boards, and forms for staff selection to certain research posts. The difficulties the changes have caused research have given rise to proposals to separate research from the higher education system[49].

The Higher Education Reform of 1977 means in certain respects a completion of the development from élite university to mass higher education and from cultivation to qualification[50]. The strivings aim at broadening the HER-system so that it is oriented less towards the top strata of a vertical divisior of labour and more towards a broad vocational training and a broader public. The higher education reform must then be seen against the background of the other educational reforms. The comprehensive school has broadly been designed as an undifferentiated uniform education (with serious curtailments in the last grades). The upper secondary school has come to include a differen-

t.ated education for a greater part of the year cohort. An adult ed.cation intended to pick up older year cohorts who went out into wo.k.g life after basic education has been set up (recurrent education). Recruitment to higher education has been broadened so that even those who have gone out into working life and have not gone through the upper secondary school have the chance of higher education. The concept of higher education has been broadened to embrace education of the most varied kinds and length and is primarily vocational education. The higher education system has been broadened organizatorically to embrace all forms of post-secondary education (at the same time as recruitment no longer is post-secondary). Research and traing for research have been given a broadened orientation,and a link to research is being sought for all higher education i.e. even for more practical study programmes like nursing, and public administration and social work. These strivings to broaden the higher education system can be set in relation to the strivings to democratize working life and the democratization of cognitive development.

In the analysis of the HER-system we can distinguish three models which, with some difficulty, can be anchored in the history of university policy.

The traditional model has the universities primarily as free "seats of learning" open to the cultivated public and enlightening the rest of society by means of scientific research, lectures and learned documents. The traditional model is linked to ideas about transmitting traditional learning, developing and spreading enlightenment. The traditional HER-system is pre-industrial and has feudal elements in its autonomous standing.

The technocratic model comes with industrial capitalism (and possibly industrial socialism in East-european sense); it stresses the HER-system's contribution to economic development and growth, its focus on industry's need of competence and research, and its subordinating to and co-ordination for these purposes. The technocratic HER-system research is focused on scientific professions, higher professions, and decision-makers in public and private bodies. The steering of research comes from the top levels. There are discontinuous status orders in the vertical division of labour and higher education affords competence for higher levels. Higher education is completely focused on the higher levels in the division of labour, recruitment take place via the upper

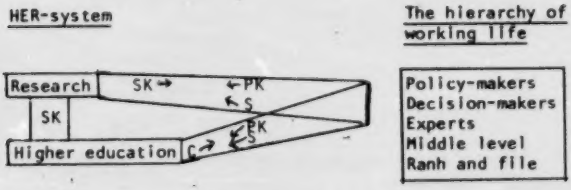
secondary school's theoretical courses, the education is founded on practical knowledge from the higher positions and from the HER-system's research.

The Democratic HER-model can be set in relation to strivings for democraization in working life and the critique of the technocratic model which emerged in the latter part of the sixties. These ideas are to be found to some extent in the ongoing university reform. The democratic HER-system's research addresses itself to the lower strata in society and fills an important cousciousness-making function, the steering of research comes from the different levels of working life, and the results of research are spread to broader groups. Higher education is an element in cognitive development for all categories; it recruits from all levels; the teaching processe's practical knowledge is anchored in the experience of all levels and thereby deals with a broader work experience; it is not one-sidedly linked to vertical career paths; trade union activity plays a more important roie and it constitutes an element in the cognitive development for widened co-determination and participation and widened laymen influence.

The changes in the HER-side are intended to match changes in the vertical division of labour e.g. with the abolition of discontinuous status orders and a tendency towards the levelling-out of knowledge gaps. The professions are intended to continue to function as spreaders of knowlege but the have a broader base, orientation and accessibility.

I have tried to illustrate the last two models in the following fugures.

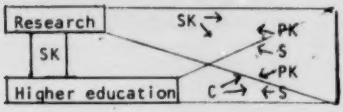
THE TECHNOCRATIC MODEL



PK = Practical knowledge
SK = Scientific knowledge
S = Stearing
C = Competence

THE DEMOCRATIC MODEL

HER-system



The hierarchy of working life

Policy-makers
Decision-makers
Experts
Middle level
Ranh and file

PK = Practical knowledge
SK = Scientific knowledge
S = Stearing
C = Competence

Research and View of Knowledge

The HER-system is meeting increased demands to carry on cognitive development and education which focus more on the problems of working life and society. This requires that knowledge from different disciplines e.g. the natural sciences and the human sciences is integrated and that scientific knowledge is combined with knowledge developed in practice-working life. Today these problems engage the Planning Commissions for Technology, Care (el. medical and para-medical care), Administration-economics-social work, education, and Culture-communication and, at the local level, programme committees and institutions. The university reform has raised fundamental questions concerning different kinds of knowledge and their production and integration and the relation between knowledge developed in practice and scientific knowledge.

Natural science can be said to have dominated research and to have set pattern of organization and policy concerning research and education. The pattern has included ideas about linear dissemination of knowledge from the centre to the periphery, from basic research via applied research to development and production in local units[51]. This model has even been criticized for research in natural sciences and technology and this criticism seems to be tenable for knowledge-creation in the field of the human sciences. Since cognitive development within all sectors contains knowledge, often mixed with natural science knowledge, there is reason to devote some space to the general problem of how scientific production of knowledge varies between different fields and what particularly marks the social sciences' social and theoretical conditions.

The following features appear to be worth stressing:

1. Social science studies socio-cultural systems, where understanding contexts presupposes understanding of the meanings and significance the people participating in the system bear[52]. Scientific knowledge about society builds on the knowledge the people in society carry and assumes that the researcher directly or via intermediaries partakes of this knowledge. Research into society must therefore take part in society's activity and cannot understand social contexts from over-isolated positions.

2. The conditions social science studies contain problems independent of those the researcher can read into them, and the people studied often have demands on the researcher and the problem conception[53]. Research into society must sometimes defend itself to be able to pursue more undisturbed basic research.

3. The knowledge research contributes to practitioners and politicans is often no more than an addition to other, practical knowledge and premises which form a basis for decision and action[54]. The contribution of research enters not a vaccum but a set of ideas it has to be confronted and integrated with.

4. The researcher himself is a part of society, the knowledge research creates has historical-social roots and builds on social premises and conditions[55]. This historical "relationism" of social science means that there are historical conditions which affect the direction of research, choises of concepts and theories, choises of values etc. The researcher has, as a memeber of society, a "social cosmology"(world view) which is going to affect his scientific paradigms. Thus social science does not have the same degree of autonomy as natural science in relation to the rest of society and to extra-scientific influence.

5. Whatever research studies and the regularities and invariances it finds also have an historical dependence[56]. Invariances are usually bound up with historically given conditions and by studying these conditions we can elucidate the conditions for changing existing circumstances. What is given is seldom what is necessary in the field of the social sciences.

6. The application and use of social science does not lead to products and physical treatment like those we are aware of from the fields of technology and medicine. It is more a matter of advice and information which together with other knowledge can give guide-lines for policy and the development of practical skills. It is difficult to point to concrete uses of social science research results.

7. Social science is of significance for raising people's consciousness and thereby helping to change social conditions. Thus research acquires significance for people's power and becomes resources for politics and practice. Research is thus involved in conflicts of interest and political-practical perspectives in another way than natural science.

This view of knowledge gives us reason to criticize the technocratic mode. It does not provide scope for the contribution of research to consciousness-making and criticism. It does not see the inequality created in the system as primarily the established are given reinforcement of education and research. Nor does it see the value of the knowledge developed outwith the established circles at the local level. Research and education are deepened by links with other parts of society and other strata. The Labour Movement's weak contact with research has been underlined in many investigations and by many commentators[57]. This leads us into the classic research policy problem - knowledge for whom and for what goals?

Research on working life in its more practically oriented form has brought into focus a research form where research is included in change activity (action research)[58]. It can mean locally rooted research where researchers go into change work in co-operation with local practitioners and take part in analyzing and in evaluating these changes in some way. As it is the local practitioners who have the power, the researches degree of activity is going to be limited by the local power situation.

Technological research has been decisive for working life[59]. Cognitive development concerning production forms and forms of working has been greatly influenced by technological thinking. It has usually been technically educated people who have led development work. Only at a relativly late stage have other kinds of research and knowledge been brought into planning and thinking about development work. The fact that scientific

management (Taylorism) predominated up to the beginning of the seventies can be seen as an indicator of the dominance of technical thinking in the spheres both of research and of development.

A centre-periphery or linear dissemination model has often been used for R&D on the technical-scientific side. If natural science research shows that a product can be manufactured by certain processes or that a particular manufacturing process generates substances with a certain degree of medical danger, this knowledge is valid for local situations. Knowledge in the social sciences does not appear to be obtainable in the same way thorugh isolated laboratory studies centrally. For instance, we cannot find, by means of experimental studies with leadership, patterns which apply automatically to the whole of working life with its tremendous variety. Cognitive development demands that we study conditions locally. Only when a local case has been tested and given the desired result can it set a pattern and spread further. Social science is founded on everyday knowledge and everyday conditions. These local conditions provide the basis on which more general knowledge is constructed. The cognitive model for social research is a periphery-centre-periphery model and can best be regarded as an interactive model of dissemination.

Thus the production of knowledge in the social sciences is more intimately related to everyday ideas and the dictates of common sense and no clear boundaries can be drawn between them. This has often been pointed out in the literature on methods and referred to as a weakness of research in social science: it is concerned with circumstances ordinary people have knowledge of.

The question is whether there is not a centralist bias built into the organization of research which also applies to working life. Research is organized according to central principles in order to attain general knowledge. General knowledge is usually addressed to the centre of society, i.e. to those who have power and resources. The sociology of knowledge centre-periphery model is relevant to the political-sociological model of the centre and the periphery. The political-sociological model has focused attention on information-knowledge and culture as instruments of power and as a power-resource. Johan Galtung, who has developed the theory of the centre and the periphery in society, shows that research is a clearly centre-reinforcing power in society and an instrument of central rule[60].

To a great extent political change in society has been conducted centraly via state intervention and legislation, and reform acitivities have been constructed centrally to a high degree. This has been bound up with the fact that capital and market forces have had considerable power locally and that it has sometimes been difficult to mobilize trade union movements locally. The Trade Union Movement is characterized by centralization and concentration. Democracy has sometimes been better able to assert itself at the central than at the local level. The question of co-determination has been pursued according to a centralist strategy, and it is therefore natural that a centralist structure is desired for cognitive development too. This centralist construction of cognitive production may come to counteract local initiatives and local mobilization. As workers acquire greater influence locally, their need of local acess to cognitive development in order to strengthen their awareness and strivings will also increase.

Education and Division of Labour

The view of knowledge mentioned above also gives us reason to question the incessant strivings to anchor cognitive development within the HER-system and to link it to rather meritocratically oriented professions. The second section, on division of labour, touched on the bifurcation theme that an impoverishment of more unqualified jobs has been accompanied by the emergence of more and more specialists with higher education. It also touched on strivings to reverse the development which has appeared. The Work Environment Act makes demands for more meaningful jobs. This has brought an interesting problem of cognitive development into focus. Shall we try here to produce specialists in order to study the socio-technical conditions in working life or shall we leave this cognitive development to laymen and trade union representatives? Let us examine the alternatives from the technocratic and the democratic form's point of view.

According to the technocratic line a "socio-technical study programme" would be established at universities and colleges. People with a behavioural science and/or technical background would be recruited to the education. The programme would cover subject matter of a technical and a social science nature and would perhaps last four years. This education would ad to specialist posts. The specialists could be employed jointly by company management and the trade unions both in large companies and regionally for smaller companies.

The democratic line would aim for cognitive development by those taking part in the activity and would not centre competence on the specialist alone. The responsibility for the function devolves on all those affected by the activity. Cognitive production, perhaps in the form of research, is founded on those affected. The education the HER-systen offers in the field is given a modular structure and the students are drawn from those participating in the activity. Such a widening of research and education is valid for several fields within working and production life.

The many specialist posts established e.g. in personnel administration and technical production planning can be built into a more horizontal and continuous structure whose starting point is the unpromoted employees and which is founded on a democratic decision-making apparatus. Participation in decision about these questions by itself makes demands on personal cognitive development, which could be provided for the employees gradually on the basis of recurrent education. Practical qualifications would be accorded greater importance for recruitment to higher education. Practical occupational activity would be a natural route to higher education. This would demand changes in principles for admission, not onesidedly linked to vertical career paths, such as trade union activity and the like,and the alternation of education and practice. There are examples of study programmes in the present higher education system which have this character.

Discontinuous status orders are connected to the vertical division of labour and blind alleys in educational and occupational systems. The transcending of discontinuous status orders means that both educational and occupational blind alleys are abolished [61]. Lowly-qualified posts act as passages and all posts are given promotion prospects. The education system must be built so that taking a lower course gives opportunities of going on to higher courses. This requires that the vertical division of labour is transcended so that qualified and unqualified tasks are spread more evenly between different posts[62].

There are different ideas about how education should relate to working life. One line sees education as a passive institution. Its job is to give people the competence working life, the economy and thereby economic growth demand. The other line assigns education a more active role. Education should contribute in a variety of ways to improving conditions in working life e.g. in the direction of more equality and democracy. Given more and better knowledge, people will transform working life.

Higher Education, Professionalism and Local Knowledge

The discussion here has been concerned with the vertical division of labour in work organizations. We have the other problem of the division labour, which is concerned with people in realtion to the service sector both the commercial and the public. Here people are faced with a host of specialists who intend in different ways to serve and guide the public. There is reason to discuss technocratic and democratic forms here too. However, it can be more difficult to spread competence here as the citizen is faced with so many sectors. In different phases of the individual's life these different fields have different degrees of relevance and they should be able to motivate the individual to periods of recurrent education, e.g. when the adult becomes a parent. Questions concerning education at different levels and what can be regarded as higher education arise here. The consciousness-making of knowledge is of great importance here. This question leads us on to the need for collective/local cognitive development.

At the beginning of this paper I dealt with the importance of using a wider concept of work which even includes unpaid work in the home. This may appear to be a side-track, but on closer analysis it seems to be something which affects the main theme to a great extent.

The money economy, the market and industrialism resulted in a division of work into private work of self-subsistence in the home and public, market-bound work at work places. The former was unpaid and the latter paid in profits or in wages. Industrialism resulted in the functions of the home shrinking and in the husband, the adult children, and other relatives going over to "public work", and eventually married women also followed them on the conditions child care laid down. The service sector's expansion in the post-war era has made further contributions to the replacement of work previously carried out in the home by different service establishments. Here professional service has played an increasingly significant role.

Private and public are used in another sense than their usual one here. There are many dimensions here and many ways of defining publicness and privateness[63]. In pre-industrial society there was a local publicness within whose bounds most work took place. Industrialization led to the dissolution of this. During a transitional period we had a bourgeois and a proletarian publicness with declining quantities of public tasks.

During the latter part of industrialization we have had a strong privatization of the home and housework, at the same time as the home has lost work. The home's private character has prevented rational cognitive development and has divorced it from public cognitive development.

The fact that women entered public working life later and that they have traditionally had a repressed and disparaged standing contributed to the labour market's traditionally female jobs being regarded as poorly paid and unqualified work. There was always a surplus of manpower on the labour market in the form of married women in the need of extra earning to help improve the household's economy. Housework was regarded as unqualified and on the labour market corresponding work became poorly paid. As a result certain socially important tasks like personally looking after children, looking after the sick, cleaning and keeping things tidy, and helping others socially and humanly constitute low-paid and low-status jobs compared e.g. with jobs like looking after capital, administering and looking after machines. The professional development of qualifications can create exceptions as in the case of doctors and medical care, where medical experts are part of a hierarchy with women serving at the bottom.

The coincidence of the private, the female, and the disparaged has led to a kind of concealment of important work. When this work has become a public concern and special public institutions have been developed to provide service this has predominantly taken place under the auspices of male professions and with the tendencies towards specialization, sectorization, and segmentation dealt with previously[64]. "Private" laymen knowledge with its holistic perspective has been disparaged and supressed. Public thinking has been marked by a rational utilitarian view (goals-means thinking), economic resource-thinking, material production-thinking (tangible results), hierarchical and sectoral thinking, competition- and performance-thinking. Much of this has been hostile to an understanding of human relations, and to aid to the weak an to rising generations. The professionalization which has taken place partly on a scientific foundation has, as was noted earlier, been inspired by a natural science perspective which has not always contributed to an understanding of human relations and the demands they make.

The question of publicness and privateness is specially topical as the expansion of the public sector (in the usual sense) seems to have reached

a ceiling on account of structural conditions and for fiscal reasons. It seems to have been realized that private work cannot be replaced by public effort (in the usual sense). At the same time these tasks demand collective efforts e.g. where people's personal development is concerned. This brings into focus the question of a "collectivization" of the private, which has taken place in the socialist countries. This intensifies the conflict between the technocratic public mode of thinking and the existing need to solve human question through collective personal solutions at local level[65].

It has been difficult to establish cognitive development concerning private work, and when it has been estabiched it has often been on the basis of rather segmented perspectives. This is true of e.g. research on "consumers" from the point of view of sales. Previously there was more well-informed research on the conditions of the home (the Home Research Institute),but this has now been partly taken over by market experts in the guise of lawyers, business economists and technologists. The revised form of HER-system sketched out previously ought to be better able than the traditional one to contribute cognitive development. We can already see an orientation towards "female" study programmes and strivings to link these "female programmes" with research. The earlier critique of professionalism and the need for a local mobilization of laymen are of particular interest here. Probably the solution is less the replacement of earlier private working forms with professional contributions and more the discovering of new collective forms for private work which are founded on laymen, not least women. Locally oriented research and locally oriented education are needed if this kind of activity is to be given as rational a design as possible.

The Higher Education System and Society

The forms outlined above for linking up higher education-research and division of labour-class stratification bring up the question of significance the HER-system has for the rest of society. Educational research and philosophy have been accused a great deal of idealism when they have believed they could change society by changing the education system[66]. The point of departure of this paper has been first strivings after change in society which are supported by the major employee organizations and which are aiming for changes in the organization of production life involving distribution of capital, co-determination, the organization of production, the division of labour, and life-careers and, second,

the fact that the organization of the HER-system is important in these strivings.

How are we to view the HER-system in relation to other sub-systems and to the whole of society in the process of social transformation? It is usual to mention the sub-system's functions in relation to the rest of society and to examine the exchange of contribution taking place between different parts. Attempts have been made to determine the education system's functions like the sorting of its graduates for vertical stratification, socialization and cultural transmission on behalf of the established socio-cultural order (social control), reproduction of the labour force, legitimation of the social order, the storing of certain age groups, and the absorption of economic resources[67].

The HER-system's function are difficult to define as they have to do with both research and education. The HER-system is related to the whole of the rest of society and its many institutions, and classifying the many different kinds of contributions is difficult. The HER-system has been proposed to have similar functions as the school system and research has been tacked on as a special function[68]. But this is a kind of activity rather than a kind of contribution.

Structural Marxists often talk about the education system's reproduction of the capitalist mode of production and bourgeois class rule. They say, for instance, that one of the HER-system's functions is the reproduction of the labour force and that it thereby reproduces the mode of production indirectly[69]. However, their accounts analyze reproduction fairly summarily and we could do with an elucidation and an elaboration of their ideas.

Reproduction analyses aim to explain changes in systems in a kind of genetic or dialectical analysis[70]. The time perspective adopted is important in such analyses. In the short term a certain condition or process may help to maintain the system, but in the long term it may lead to the system's change or dissolution. Marx tried to show how increased mechanization leads to an expansion in the short term and to stagnation in the long term on account of the falling rate of profit. It is necessary to specify what is preserved or dissolved and what the mechanisms or processes of change look like. Discussions of the HER-system's reproductive functions often lack elucidation of the time perspective, of what the genetic processes or mechanisms are, and any kind of evidence or argument for the assumption of these processes.

In the short term the HER-system has, in some respects, reproductive functions in relation to division of labour and stratification and class relations. It tends to incorporate existing industrial practice in higher education and thus reinforces existing patterns of division of labour and stratification. The HER-system seeks out the existing demand for vocational education and develops study programmes corresponding to it; this is going to strengthen existing patterns of division of labour and stratification. The HER-system acts together with other educational systems as a sorting apparatus for industry and contributes in this way to the preservation and development of the system of stratification. It can also be pointed out that the content of some research and higher education elements legitimating the production system and class conditions.

However, there are features of the HER-system which cannot be said to reinforce the existing division of labour and class stratification in the short-term. There is clearly a state of tension between higher educations's dissemination of competence and what industry is looking for today. This dissemination of competence leads to increased demands on e.g. working conditions and can be supposed to accelerate strivings after increased industrial democracy. The increased dissemination of knowledge can also be supposed to create a critical base to certain professions' power and strivings. There are already efforts to strengthen lower occupational groups' cognitive development and to decrease in this way the veritcal division of labour and the uneven dissemination of knowledge. The ideas which set their mark on higher education and research today cannot be said to be consistently class-legitimating in the same way as previously, and the HER-system has become a forum for criticism and strivings after change.

If we look at the whole of it in the long term, it immediately becomes more complicated. Functions of the HER-system and of changes within the HER-system must be viewed against the background of other changes. We must take account of uninfluenceable changes and changes which arise from political strivings in various fields. Here we can have different views about what appear to be structurally given regularities and trends. Here different interpreters are going to distinguish different degrees of freedom in relation to structurally determined trends. Some Structuralists tend to see a highly determined development and accord political and cognitive strivings little influence.

The discussion in the section on social stratification tried to show that the cognitive system (education and research) is bound up in a rather complicated way with other parts of society and that conditions in the economic system are important e.g. concerning ownership, market-structure -steering, wage structure and division of labour-qualifications structure. Arguments were given for division of labour-qualifications structure constituting an important complex together with education-cognitive development. Obviously this latter complex is influenced by ownership, market-structure - steering and wage structure, but we do not know how much. Nor do we know what effect reforms concerning division of labour, cognitive development, and education can have on the other conditions. Here there is reason to have an open mind.

The HER-system's critical function is an important factor in the struggle against exploitation and injustices, and therefore against class conditions. A prerequisite for this function is a considerable autonomy for the critical knowledge-creating professions, like scientific professions, journalists and other news-transmitting professions, cultural workers of different kinds, teachers, analysts etc. Most professions are concerned to defend some form of autonomy and responsibility in the creation of knowledge.

Part of this critical function is the knowledge-integrating function touched on previously; Collating and developing knowledge from different fields to new entities. Here the whole of the HER-system has an important responsibility for transcending the limitations of sectoral cognitive development and specialization. In recent years there has been a greater awareness of the need for holistic efforts to cross sectoral and disciplinary knowledge boundaries. In this paper I have tried to focus attention on a point of contact between, on the one hand, laymens' need for holistic knowledge and the strivings of inter-disciplinary research after a holistic perspective. In some situations sectoral fragmentation can be a common enemy. In other situations scientific disciplinary specialization can be an obstacle to understanding between researches and laymen.

The scientific professions' autonomy has continued to be a central question. The Government's efforts to streamline the higher education system with increased influence for the representatives of public interests has been seen as a threat to this autonomy side by side with the expansion of bureaucrat-steered sectoral research. Certain interests groups e.g. trade unions have demanded greater influence on research

and e.g. demanded seats for interest organization on faculty boards and in scientific institutions.

As I see it there is no effective substitute (functional equivalence) to professional autonomy for guaranteeing the critical orientation of social cognitive development. The human sciences are between Scylla and Charybdis. On the one hand, research must be a part of the totality of society and open for influence and contacts in all directions[71]. On the other hand, it must be protected from concrete social organizations' direct power and particular interests e.g. in the form of government authorities, interest organizations and parties. In Sweden we have numerous examples of authorities, industrial interests and interests organizations steering obstructing research in an unfortunate way. I touched on unfortunate experience from China and Eastern Europe previously.

The question of autonomy has been brought into focus in connection with the organization of sectoral research. The importance of linking sectoral research closely to the authority concerned has been emphasized. But this risks the restriction of research by short-term and temporary frames for action and outlooks, and the supression of critical research[72]. Cognitive development within a sector also demands a freer relation to the authority in charge, at the same time as it needs close contact with and a participatory role in activity within the field. The replacement of bureaucratic influence to some extent by the influence of politicians and laymen would be desirable[72].

6 NOTES

1. This paper can be seen as an excurses of two projects. The first project, Social Scientists and Practitioners, was a study of social scientists relations to practitioners and practice. It is described in a report "Social scientists and Practitioners", revised version,Research Report No 38, Department of Sociology, Göteborg, 1976. The second project was carried out in collaboration with Esbjörn Johansson. Both have been financed in the Swedish National Board of Universities and Colleges' (NBUC) programme for research into higher education. Project number 2 deals with research and policy in the fields of working life and higher education among other things. I have written two stencilled reports which are relevant to the present paper:

   1) The Role of Social Science in Working Life Policy: The Case of Postwar Sweden. Contribution at the Symposium Man and Working Life, University of Stockholm, June 1978 and

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Bergendal, Gunnar 1977.
Higher Education and Manpower Planning in Sweden. UHÄ.

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The Social Construction of Reality. A Treatise in the Sociology of Knowledge. Penguin Books.

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54. Lindblom, C E & Cohen, D K. 1978
Social Research in Social Problem Solving: The Issues (Stencil)

55. Mendelsson E, Weingart P & Whitley R. 1977.
The Social Production of Scientific Knowledge.

56. Galtung, Johan. 1977
Methodology and ideology, Essays in Methodology. Volume One. Christian Ejlers Copenhagen.

57. Forskningspolitik. Betänkande av forskningsrådsutredningen SOU 1977:52 kap 16.
(Research Policy. Report by the Commission on Research Councils, Swedich Government Official Report.)
Forskningen och tjänstemännen. Rapport från TCO:s forskningsnämnd 1978.
(Research and the White-Collar Worker. Report from TCO:s research

comittée. TCO = The Swedish Central Organization of Salaried Employees) Forskning. En fråga för fackföreningsrörelsen LO 1978. (Research. A Question for the Trade Union Movement LO 1978. LO = The Swedish Confederation of Trade Unions).

58. Medbestämmande och arbetsliv. Kartläggning och analys av forskningsbehov.
(Co-determination and working life. A Mapping and an Analysis of the Need For Research.)

59. I touch on this development in the paper. Forskning och politik på arbetslivets område. Stencil. Sociologiska institutionen 1978. (Research and Policy in the Field of Working Life. Stencil. Department of Sociology.)

60. Galtung, Johan. 1977.
Methodology and Ideology loc.cit chaps 1, 7 and 9.

61. The question of education and the division of labour has been analyzed in research on recurrent education, e.g:
Abrahamsson K, Nilsson O & Rubensson K. 1978.
Recurrent Education. Ideals and Realities in the Swedish System of Higher Education. UHÄ Research Report 1978:01.

62. Utbildning för förändrat kontorsyrke. TCO rapport nr 8 till kongress 1976.
(Education for changed office occupations. TCO report no 8 to congress 1976.)

63. Interesting views on the concept of the public are found e.g. in:
Habermas, Jürgen. 1971.
Strukturwandel der öffentlichkeit.
Frankfurt am Main. Luchterband.
Senett, Richard 1977.
The Fall of Public Man.
Cambridge Unviversity Press.

64. There is a critique of the professional services which have replaced the family's private work in the following books among others:
Hall, Peter. 1977. loc.cit. ch. 9, 11 and 12.
Lasch, Christoffer. 1977

Haven in a Heartless World. The Family Besieged.
New York. Basic Books Inc. Publishers.

65. Rita Liljeström has worked with these problems. See e.g:
Time Aspects of Production and Reproduction.
Paper to the symposium on Man and Working Life. Stockholms Universitet. Juni 1978. Stencil.
She has a draft of a project intended to study production and reproduction in people's families lives. Her Work and Culture (Arbete och Kultur) deals with this question.

66. For a critique of educational research from a structural viewpoint:
Callewaert,S. 1976.
Inledning (Introduction)
Callewaert S & Lundgren U. 1976.
Undervisningsforskning och social reproduktion, båda i Jämlikhetsmyt och klassherravälde,
En anatologi om skola och utbildning i avancerade kapitalistiska samhällen (Educational Research and Social Reproduction, both in The Myth of Equality and Class Rule. An anathology about School and education in advanced capitalist societies.) Lund. Bo Cavefors.

67. Abrahamsson, B. 1973.
Utbildningsfunktioner (Functions of Education).
Sociologisk forskning 4, 1973.

68. Svensson, Lennart loc cit. p 50 ff.

69. The structural Marxists have many interesting ideas, some of which I have touched on here. But no matter what variant of the German Structural Marxist Schools you adhere to (the Berlin School or the System School), you seem to be working with concepts so abstract that it is difficult to distinguish important phenomena in society. Ultimately the demands of the totality of capital for capital accumulation steer qualification structures and education. The state's real task is to provide the conditions capital accumulation requires and, in consequence. to support the above-mentioned qualifications structure and education.

What have we asserted when we say e.g. that the framework for education is determined by the conditions of reproduction of capital? It seems to me that education in every modern society must be oriented towards the conditions of reproduction of capital in some way. This is true of the non-capitalist countries in Eastern Europe. We need to specify this with regard to the role of private capital in society and the public sector's character of not being tied to the system of markets . The Theory of the qualifications structure's double character (it is determined by the concrete work process and the process of value formation) is so general that it too applies to developed societies, e.g. the non-capitalist countries in the East. We need to discuss the connections more concretely with regard to several different kinds of relations in the economic and political systems which I have given in rough outline in the section on class stratification.

French Structuralism, e.g. Bourdieu and Passeron, has taken in interest in an other side of the education system: cultural transmission and the class-repressive elements which may be contained in this transmission. British Structuralism has also studied this cultural transmission, where language plays a major role as a class-differentiating instrument, e.g. Basil Bernstein. I have not been able to take up this theme in this paper but they are relevant to the theme of my paper.

Broady, Donald. 1978.
Utbildning och politisk ekonomi. Introduktion till sjuttiotalets marxistiska utbildningsforskning i Västtyskland och Danmark. Rapport 1. Högskolan för lärarutbildning i Stockholm. Institutionen för pedagogik. Stockholm. (Education and Political Economy. Introduction to the Marxist Educational Research of the Seventies in West Germany and Denmark. Report 1. Stockholm Institute of Education. Department of Educational Research. Stockholm.)
Bourdieu, Pierre and Passeron, Jean Claude 1977.
Reproduction in Education, Society and Culture. Sage Publication. London.
Bernstein, Basil. 1975.
Class, Codes and Control, Volume 3. Towards a Theory of Educational Transmission.
Routledge Kegan and Paul. London.

70. Elster, Jon. 1971.
Nytt perspektiv på ekonomisk historie.
Oslo. Pax Forlag, p 36 ff.
(New Perspectives on Economic History).

71. Dahlström, Edmund. 1976
Samhällsvetare och praktiker.
(Social Scientists and Practitioners)loc. cit.

72. I have dealt with the question of the human sciences' autonomy and relations to practitioners of different kinds in several contexts, e.g.
Researches, practioners and the development of Social Science, R & D for Higher Education, 1977:5, UHÄ, Stockholm and in Interaction between Practioners and Social Scientists in Research and Development, a.a., 1978.

Forskningsrapportserien vid Sociologiska institutionen, Göteborgs universitet, omfattar rapporter, artiklar och uppsatser, utarbetade av forskare, lärare och elever vid institutionen. Serien står öppen för alla skrifter, som kan ses som informativa och stimulerande för en sociologiskt intresserad läsekrets.

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